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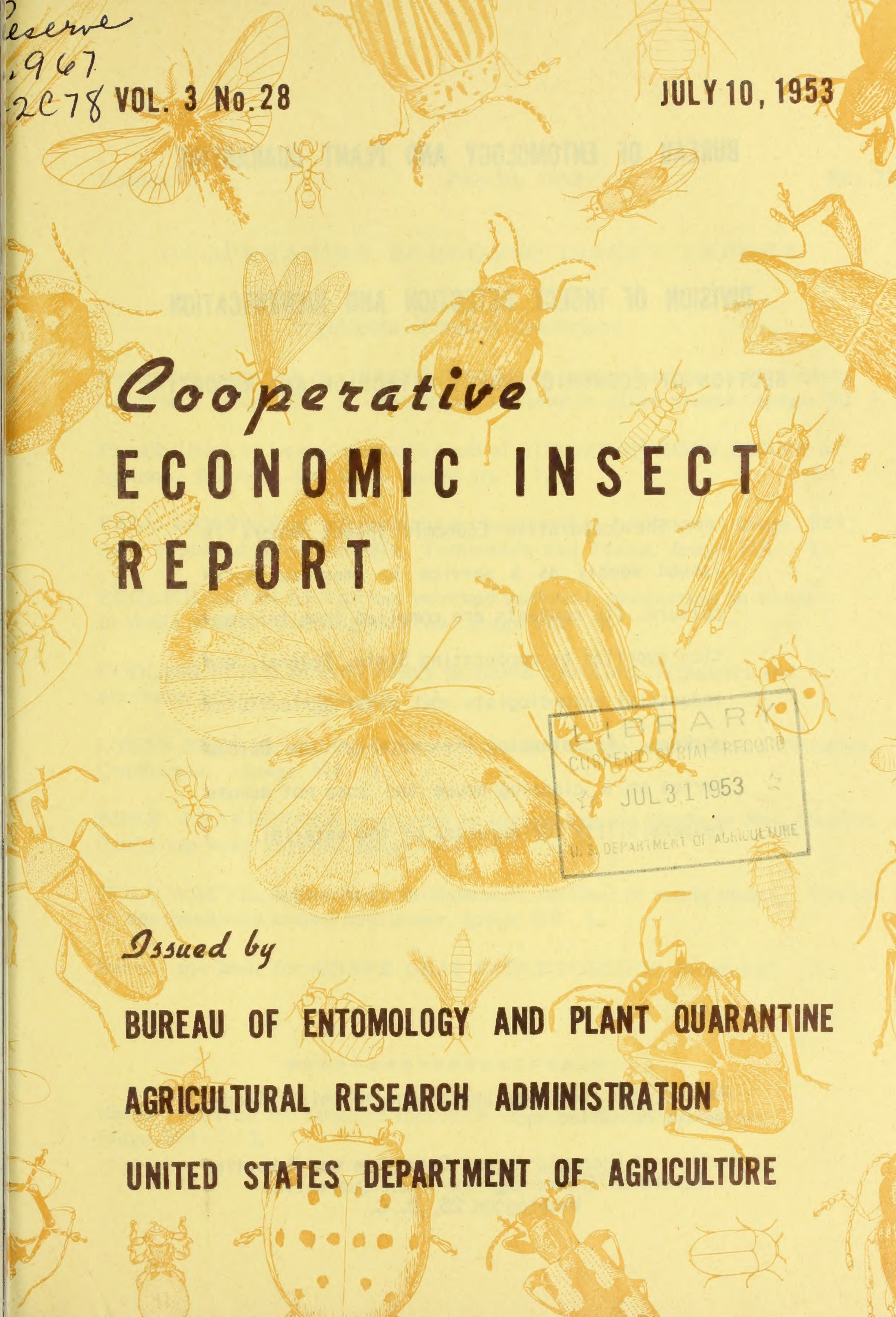

Cooperative
ECONOMIC INSECT REPORT

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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

DIVISION OF INSECT DETECTION AND IDENTIFICATION

SECTION OF ECONOMIC INSECT DETECTION AND REPORTING

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Bureau serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 3 July 10, 1953 No. 28

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

Extensive outbreak of GRASSHOPPERS on range land in south central Colorado. (page 523). Heavy infestations in other states. (page 511).

Possibilities of heavy second brood of EUROPEAN CORN BORER in Indiana, Illinois, and Iowa. (page 511).

FALL ARMYWORM infestations widespread in Louisiana. (page 524). Also reported from Georgia, Tennessee and Texas. (page 512).

ENGLISH GRAIN APHID has reached outbreak proportion in wheat in Walla Walla, Washington area. (page 524).

CODLING MOTH activity heavy in North Carolina, Missouri and southern Indiana. (page 515).

LYGUS BUGS increasing in lima beans in Orange and Ventura Counties, California. (page 518).

BEET LEAFHOPPER continues to invade tomato fields in New Mexico. Curly top very severe. (page 519).

BOLL WEEVIL appearance in Missouri earliest in many years. Threat in southeastern states continues. (page 519).

Survey methods for GRAPE LEAF SKELETONIZER. (page 525).

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Notes received too late for inclusion in the body of this issue. (page 524).

WEATHER OF THE WEEK ENDING July 6, 1953

The drought is most severe in Arkansas, Oklahoma, eastern New Mexico and extreme western and extreme southern parts of Texas where the total rainfall for last 7 weeks was mostly less than 10% of normal. The Rio Grande River bed dried up at Laredo, Texas during June for first time in recorded history. Heavy rains from June 27-29 had relieved drought in Louisiana, middle and Southern Mississippi and south central and eastern Texas. Furthermore, showers during this week brought local relief to some of dry areas. However, total rainfall for last 7 weeks was still less than 25% of normal in most of southern Great Plains and lower Mississippi Valley. Extremely dry conditions persist also in Arizona, southern Utah and adjacent areas. The persisting high temperatures and lack of rain continued the severe drought situation in the western portions of Texas and Oklahoma, southwestern Kansas, southeastern Colorado, and eastern New Mexico. In contrast crops continued good to excellent development in the north-central interior where temperatures generally were favorable and light to heavy showers were beneficial in maintaining ample soil moisture. Rainfall was too light to be of much benefit in most of southern Missouri, western portions of Kentucky and Tennessee, most of Arkansas, and northern Mississippi where all crops need rain badly. In parts of New England and in most middle and southern sections west of the Continental Divide extremely scanty rainfall is limiting crop growth except those that are irrigated. In the Pacific Northwest soil moisture is still mostly ample due to previous rains. Abnormally hot weather prevailed east of the Continental Divide, except for a brief cool spell in the north-central interior and northeastern quarter about July 3 an 4 when minimum temperature in the 40's were quite general in more northern areas on the 3d. Duluth, Minn., recorded 40.7° which was the lowest July temperature there in 80 years of record. Phillipsburg, Pa., reported 35° on the 4th. The dry weather has developed a high fire hazard in New Hampshire and Maine, and in some sections of the far West. Over 3,000 acres were burned in a forest fire near, Cody, Wyo., and some fires also occurred in southern California.

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Reports in this issue are for the week ending July 3, unless otherwise designated.

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - IDAHO - Infestations rather heavy in areas scouted. (Thompson, June 27). UTAH - Damaging populations in areas of Salt Lake and Cache Counties. (Knowlton). NEW MEXICO - Heavy infestations in Union, Colfax and Harding Counties, but drought conditions make treatment questionable. (Dobson). TEXAS - Local infestations on crops in some areas. (Garrison, Roark). OKLAHOMA - Continue a problem; heavy infestations in Alfalfa and Pottawatomie Counties. (Bower). KANSAS - Migrations from small grains causing some damage to border rows of corn. (Gates). MISSOURI - Threatening populations in areas scattered over southern three-fourths of State. Feeding damage in most corn fields in southeastern counties. (Kyd, Thomas). IOWA - One to 10 nymphs (Melanoplus differentialis and M. femur-rubrum) per square yard in oats, legumes and pastures in southern half of State. (Gunderson). ILLINOIS - Many farms in southern half of State and some areas farther north have large populations of nymphs in fence rows, roadsides, meadows and pastures. Movement into crops underway. (Decker). INDIANA - Destructive numbers in southern half of State. (Davis).

EUROPEAN CORN BORER - (Pyrausta nubilalis) - INDIANA - Serious trouble from first brood not anticipated, but because of large amount of late-planted corn, may have heavy second-brood infestations. (Davis, June 29). WISCONSIN - Hatching in all southern counties surveyed except Dodge and Dane. Corn from 30 to 42 inches extended. (Fisher, June 30). ILLINOIS - Egg laying complete or nearly complete in all sections. Many eggs lost in past week, and in general, potential danger dropped materially. Very little field corn will justify spraying; however, still too early to assume corn borer problem over for season. If conditions favorable,, could easily have a very heavy second generation in August. (Decker). IOWA - Indications of a big second brood. Populations of larvae higher than since 1949. Larvae developing rapidly and moths will be flying week of July 20. Second-brood egg laying will be drawn out making timing of sprays very difficult. (Gunderson). MISSOURI - Pupation and emergence of summer-generation moths in southeastern counties. KANSAS - About 10 percent pupated in some early corn in Pottawatomie, Douglas, Leavenworth and Johnson Counties, though larvae in all stages. Infestations by second brood may occur in much corn planted late enough to escape first brood. (Slagg, Smith). More damage in Kaw Valley than any other area. (Gates).

MORMON CRICKET (*Anabrus simplex*) - IDAHO - Baiting in Cambridge area shows excellent results (Thompson, June 27).

CORN EARWORM (*Heliothis armigera*) - UTAH - Infesting sweet corn in Washington County. (Knowlton, June 25). KANSAS - Abundant in alfalfa. Damage common in whorls and tassels of corn. (Gates). IOWA - Infesting whorls of corn in southern half of state. (Gunderson). MISSOURI - Most larvae pupated; some moth emergence in southeast. (Kyd, Thomas). ILLINOIS - Eggs in large numbers on early corn from East St. Louis south. Some newly-emerged moths active at Champaign. Moderate numbers of advanced larvae in early market corn and in whorls of field corn as far north as Rock Island and LaSalle. This indicates probable heavy infestations in all corn in August. (Decker).

FALL ARMYWORM (*Laphygma frugiperda*) - GEORGIA - Heavy infestation in whorls of corn in Tift county, June 19. (Morgan). Light infestation of nearly mature larvae in corn in Spalding County June 26, which is early. (Beckham). TENNESSEE - Scattered light infestations in corn in Sequatchie County. (Mullett). TEXAS - Medium local infestation on rice in Matagorda County. (Pfannstiel).

CHINCH BUG (*Blissus leucopterus*) - TEXAS - Severe local infestation on corn in Bowie County. (Luce). IOWA - Average 1 to 10 per square foot in oats and wheat in Warren, Lucas, Monroe, Appanoose, Davis, and Wapello Counties. (Gunderson). ILLINOIS - Some grain fields producing light migrations and some still have populations that can produce light migrations at harvest. (Decker). INDIANA - Not a threat at present; however, possibility that second generation may be more abundant than usual. (Davis, June 29). MISSISSIPPI - Numerous in corn fields in Neshoba County. (Hutchins). NORTH CAROLINA - Some marginal damage to corn in several counties. (Jones, Kulash, Kinsey, June 25).

STALK BORER (*Papaipema nebris*) - INDIANA - Many reports of damage to corn. (Davis, June 29). MICHIGAN - Reported from several areas. (Hutson). IOWA - Damaging corn in borders of fields. (Gunderson).

A CORN BLOTCH LEAF MINER (probably *Agromyza parvicornis*) - NORTH CAROLINA - Severe damage to corn in some eastern counties. Control measures not too satisfactory. (Topping, Tuten, Pruden, Collins, Scott).

BILLBUGS (Calendra spp.) - INDIANA - Large amount of damage to corn in northeastern area. (Davis, June 29).

CORN EARWORM, EUROPEAN CORN BORER AND SAP BEETLES causing heavy damage to corn in southern Delaware. (Late News).

JAPANESE BEETLE (Popillia japonica) - NORTH CAROLINA - Abundant on many crops in Brunswick, New Hanover and Pamlico Counties. (Reid). Light infestation on corn in Martin County. (Brandon, June 25).

CORN FLEA BEETLE (Chaetocnema pulicaria) - INDIANA - Stewart's disease, carried by this insect, causing much loss in corn plantings. (Davis, June 27).

A GRAPE COLASPIS (Colaspis sp.) - MISSOURI - Adults causing light to moderate damage to leaves of soybeans and corn; heavier in western and northern areas. As high as 4 adults per plant in some corn. (Kyd, Thomas).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - INDIANA - Some serious outbreaks throughout southwestern quarter of State. Unusual number of reports. (Davis, June 29). MISSOURI - Extensive damage to small corn over much of State. Eighty to 85 percent damaged stalks in some corn fields. Damage to small cotton and soybeans declining in southeastern counties. Larvae mostly in third and fourth instars. Parasitism becoming heavy. (Kyd, Thomas).

WIREWORMS - SOUTH CAROLINA - Considerable injury to field corn and soybeans in untreated fields in Hampton County, chiefly by sand wireworm (Horistonotus uhlerii). Adults of Gulf wireworm (Conoderus amplicollis) and C. vagus relatively abundant in coastal area; a few specimens taken in lower Piedmont areas. Adults of tobacco wireworm (C. vespertinus) general in coastal and Piedmont areas. (Deen, Reid). IDAHO - Injury to corn in some fields in southwestern area. Ctenicera glaucus reported causing considerable damage in barley field in Lewis County. (Manis, June 27). INDIANA - Considerable damage to corn, especially in northern half of State. (Davis).

SAY STINK BUG (Chlorochroa sayi) - UTAH - Populations much lower than in 1952. No serious damage. (Knowlton).

SAWFLY ON WHEAT (Pachynematus sp.) - CALIFORNIA - Entire fields of wheat destroyed during spring by larvae in very limited area in Cuyama Valley, Santa Barbara County. Damage apparently noticed only in last few years. Insect may be recent migrant to area. Specimens being reared for more definite determination. (Osborn).

HESSIAN FLY (Phytophaga destructor) - KANSAS - A few reports of damage to 1953 wheat crop. (Gates).

BLISTER BEETLES - KANSAS - Abundant on alfalfa and gardens. (Gates). MISSOURI - Epicauta spp. numerous in some fields of alfalfa, soybeans in southern half of State. Damage extensive in some cases. (Kyd, Thomas). ARKANSAS - Infesting soybeans in many areas. (Barnes).

APHIDS - TEXAS - Medium local infestations on maize in Collin (Dalburg) and Coryell Counties (Williams). Locally severe in Jackson County. (Rider). Medium to severe isolated infestations in Kaufman County. (Garner, June 27).

CLOVER WEEVILS (Hypera meles and H. nigrirostris) - SOUTH CAROLINA - Fairly general over State during early June; heaviest in older stands of crimson clover. (Johnson).

LEAFHOPPERS - MISSOURI - Considerable yellowing of alfalfa over much of State. Damage largely by Empoasca fabae, but mixed populations in most fields. (Kyd, Thomas). INDIANA - Potato leafhopper damaging alfalfa. (Davis, June 29). DELAWARE - Potato leafhopper increasing generally in alfalfa; yellowing severe some areas. (Late News).

VETCH BRUCHID (Bruchus brachialis) - OKLAHOMA - Large numbers around vetch cleaners in Hughes County. (Stiles).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - KANSAS - Damage not nearly as severe as in last two years. (Gates).

ALFALFA WEBWORM (Loxostege commixtalis) - KANSAS - abundant in alfalfa. (Gates).

ALFALFA WEEVIL (Hypera postica) - WYOMING - Severe injury in some alfalfa fields not treated early. (Wallis). COLORADO - Larvae appearing on second crop in western area. (Daniels).

ARMYWORMS - OHIO - Pseudaletia unipuncta moth flights continue heavy at Athens. (Stehr). ILLINOIS - A few moths still in flight in central and northern area, but no reports of larvae. (Decker). IOWA - Armyworm remains a threat. (Gunderson).

BEAN LEAF BEETLE (Cerotoma trifurcata) - NORTH CAROLINA - Considerable damage to soybeans and snap beans in many areas. (Tuckwiller, Tuiter, Marsh, Scott, June 25). INDIANA - Damage to young soybeans. (Davis, June 29). MISSOURI - Damage to soybeans generally light. (Kyd, Thomas).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - GA. moderate infestation of mature larvae destroying stems in 1,000 acres of peanuts in Worth County. Outbreak also reported from Turner County, June 29. (Morgan). FLORIDA - Very light infestation in soybeans in Gadsden County area. (Guthrie).

FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - NEW JERSEY - First-brood injury continues less than normal in treated apple orchards. (Farley). MARYLAND - Second-brood moths at Hancock July 3. (Graham). NORTH CAROLINA - Serious potential in apple growing areas. (VanDeman, Turnipseed, Fink, June 20). OHIO - Last spring-brood moth emerged in cage at Wooster June 26. Emergence extended over 46 days - longest period on record in Ohio. Larvae increasing but injury still light. (Cutright). INDIANA - Second-brood larval activity expected to be extremely high in Vincennes area between July 5-11. (Hamilton). Second-brood hatch well underway in southern ILLINOIS-INDIANA areas. Should begin in central areas of these states about July 13-15. (Spray Serv. Rept.). MISSOURI - Major problem of fruit growers at present. Peak of hatch should begin about July 15. (Wkly. Rept. Fr. Grs.).

PLUM CURCULIO (Conotrachelus nenuphar) - GEORGIA - Second-generation eggs deposited earlier than last year in Fort Valley area. All peaches yet to be harvested subject to infestation. (Snapp, June 22).

APPLE MAGGOT (Rhagoletis pomonella) - MICHIGAN - Abundant at Haslett and Hart. Numerous in traps in blueberry plantings at Grand Junction. (Hutson).

Status of European Chafer - 1952

By the end of the 1952 flight season, the European chafer (Amphimallon majalis) was found to have spread in the continuously infested area in New York into parts of three counties - Ontario, Wayne, and Monroe - covering approximately 525 square miles. It was found within one-half mile of Seneca County on the eastern edge of the continuously infested area. It is spreading towards the north, west, and northwest, more rapidly than in the opposing directions. The only other infestations known to date occur as two isolated infestations: one in Meriden, Connecticut, at the Wilbur Cross Parkway, which was discovered in 1951, and one at Camillus, New York, which was discovered during the summer of 1952. Both infestations have been traced to shipments of nursery stock to these locations from the Newark area before the year's treatments were initiated to free the soil balls of grubs. Both of the isolated infestations have been treated with insecticides. Only nursery stock that meets appropriate quarantine requirements is permitted to move out of the infested area.

A Japanese beetle bucket trap painted black with its baffles smeared with grease to act as an adhesive and baited with Java citronella-eugenol 3:1 mixture has demonstrated its ability to attract and capture beetles in the very lightly infested areas, and has aided materially in establishing the limits of known infestation. (Breitfeld, Gambrell, Tashiro).

SPIDER MITES - NEW JERSEY - Continue abundant in some orchards. (Farley). DELAWARE - Rapid and substantial build-up on both apples and peaches. (Late News). MARYLAND - Both European red mite (Metatranychus ulmi) and two-spotted spider mite (Tetranychus bimaculatus) damaging apple foliage in all parts of State. (Bissell). OHIO - Parathion-resistant European red mites noted in two orchards. (Cutright). INDIANA - Bronzing some apple trees in Orleans area. (Marshall). Continue a problem in many orchards in Vincennes area. (Hamilton). ILLINOIS - Two-spotted spider mite increasing sharply in Carbondale area. (Chandler). MISSOURI - Some damage in untreated or poorly treated orchards. (Wkly. Rept. Fr. Grs.). COLORADO - Two-spotted spider mite building up in Mesa County apple orchards. (Daniels).

JAPANESE BEETLE (Popillia japonica) - NORTH CAROLINA - Very abundant in Beaufort, Washington and McDowell Counties. Threat to grape crop in Plymouth area. (N. C. Ins. Pest Surv., June 20).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - GEORGIA - Infestations in peaches in Fort Valley area lighter than average year. (Snapp, June 29). MISSISSIPPI - Damaging peach fruit and twigs in Aberdeen district. (Goodgame).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - OHIO - First second-generation moth at Wooster June 26. (Cutright). MARYLAND - First second-brood moth at Hancock July 1. (Graham).

CALIFORNIA RED SCALE (Aonidiella aurantii) - TEXAS - Severe widespread infestation on citrus in Zavala and Dimmit Counties. (Richardson).

A GRAPE LEAFHOPPER (Erythroneura sp.) - Arizona - Some damage to grapevines in Glendale vicinity. (Brantlinger).

YELLOW-NECKED CATERPILLAR (Datana ministra) - MICHIGAN - First larvae of season on blueberries at Grand Junction June 30. (Hutson)

WALNUT CATERPILLAR (Datana integerrima) - MISSOURI - Heavy damage to walnuts and pecans. Most larvae mature. (Kyd, Thomas).

TRUCK CROP INSECTS

POTATO LEAFHOPPER (Empoasca fabae) - DELAWARE - Damaging beans and potatoes in some areas. (Late News). OHIO - Very abundant on beans in Athens area. Considerable leaf curling. (Stehr). INDIANA - Becoming abundant on potatoes. (Davis, June 29). MICHIGAN - Infestation becoming general in lower peninsula. (Hutson).

APHIDS ON POTATOES - MAINE - Both size of overall aphid populations and percent of plants infested increasing sharply in Presque Isle vicinity in untreated plantings. (Shands).

POTATO PSYLLID (Paratrioza cockerelli) - WYOMING - Populations increasing on all host plants in Goshen County. (Wallis).

WIREWORMS - NORTH CAROLINA - Several species of Conoderus and and Glyphonyx infested potatoes in eastern areas. (Reid, June 25).

TUBER FLEA BEETLE (Epitrix tuberis) - WYOMING - Continues to increase particularly on early potatoes. (Wallis).

POTATO FLEA BEETLE (Epitrix cucumeris) - INDIANA - Increasing. (Davis, June 29).

LEAFMINERS (Liriomyza sp.) - CALIFORNIA - Attacking tomato plants in San Fernando Valley early enough so that considerable damage may be done. (Campbell).

TOMATO FRUITWORM (Heliothis armigera) - MISSOURI - Up to 20 percent damage to green fruits. (Kyd, Thomas).

LYGUS BUGS (Lygus spp.) - CALIFORNIA - Populations on lima beans from a trace to 30 bugs per 100 sweeps in Orange and Ventura Counties; as high as 130 bugs per 100 sweeps in Orange County. (Campbell).

PEA APHID (Macrosiphum pisi) - UTAH - Considerable damage to early peas. Late peas heavily infested and insecticides needed over large acreage. (Knowlton). IDAHO - Average of 27 per sweep in peas in south-central area. (Douglass, June 27).

SPIDER MITES - IDAHO - Appearing in bean plantings in southwest, but infestation not sufficient to cause damage. (Walz).

PEA WEEVIL (Bruchus pisorum) - IDAHO - Adults moving into pea fields in southwest. (Walz). Little egg laying in northern area due to cool weather. Apparently migration into early-blooming fields complete. (Manis, June 27).

FLOWER THRIPS (Frankliniella tritici) - MISSISSIPPI - Numerous in flowers of beans in Jasper County. (Hutchins).

MEXICAN BEAN BEETLE (Epilachna varivestis) - NORTH CAROLINA - Considerable damage in many eastern counties. (Reid, McGahey, Scott, June 25).

MELON APHID (Aphis gossypii) - TEXAS - Severe isolated infestation on watermelons in Frio County. (Richardson, June 27).

SQUASH VINE BORER (Melittia cucurbitae) - NORTH CAROLINA - Severe damage in several areas. (Scott, June 25).

SQUASH BUG (Anasa tristis) - TEXAS - Medium infestation on cucurbits in Franklin and Anderson Counties. (Irons, Stephenson). NORTH CAROLINA - Prevalent on cucurbits. (Brett, Reid, Scott, June 25). MARYLAND - Severe on cantaloup and watermelon in Montgomery County. (Bissell).

ONION THRIPS (*Thrips tabaci*) - IDAHO - Migration into onion fields in southwest continues. Some fields treated. (Walz, June 27). COLORADO - Serious damage in Arkansas Valley. Onions severely damaged. (Daniels). INDIANA - Increasing rapidly. Spraying underway. (Davis, June 29).

BEET LEAFHOPPER (*Circulifer tenellus*) - NEW MEXICO - Continues to invade tomato fields in several counties. Some fields plowed up because of curly top; others seriously affected. (Dobson).

FLEA BEETLES - NORTH CAROLINA - Damage by larvae and adults continues severe in many areas; heavier than in 1952. (N. C. Ins. Pest Surv., June 25).

HARLEQUIN BUG (*Murgantia histrionica*) - TENNESSEE - Attacking cabbage and broccoli in Knox County. (Mullett).

TOBACCO BUDWORM (*Heliothis virescens*) - SOUTH CAROLINA - Damaging top leaves of full-grown tobacco plants in Florence County. (Allen).

CUTWORMS - NORTH CAROLINA - Caused severe damage to tobacco in Hertford, Carteret, Wilson and Alleghaney Counties. (Rabb, Scott, Williams, Black, June 20).

HORNWORMS (*Protoparce spp.*) - NORTH CAROLINA - Population on tobacco generally low except in some counties. (Lawson, June 25). MARYLAND - Prevalent in tobacco. (Bissell). KANSAS - Common on tomato plants. (Gates).

GREEN PEACH APHID (*Myzus persicae*) - SOUTH CAROLINA - Severe, spotted infestations in tobacco fields in Florence area. (Allen). MARYLAND - Increasing in some tobacco fields. (Bissell).

COTTON INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - NORTH CAROLINA - Between peaks of adult emergence; heavy emergence expected within 10 days. (Cotton News Lett. July 3). SOUTH CAROLINA - Sixteen untreated fields in 13 counties examined; all infested. Square infestation averaged 44 percent comparing with 19 percent for corresponding week 1952. Sixty-four of 69 treated fields in 17 counties found infested. Square infestation averaged 11 percent against 5 percent for corresponding week in 1952. (Walker, Fife et al). Emergence past peak but continues in serious numbers. (Cotton Lett.). TENNESSEE - Infestations dropped to about one-half that of last week in west Tennessee. Average infestation all fields 13 percent against 22 percent last week and 5 percent a year ago. Sixty-three percent of fields infested compared with 64 percent last week and 53 a year ago. (Morris). GEORGIA - Very heavy infestations general in all areas. Of 194 fields inspected in 40 counties, 190 (98 percent) infested compared with 84 percent last week and 78 two weeks ago. Average of 904 weevils per acre in 20 untreated fields, 759 weevils in 6 treated fields. Square infestation average of 45 percent in 23 untreated fields; 20 percent in 145 treated fields. Last week's averages were 39 and 12 percent. (C. R. and J. C. Jordan, Fussell). ALABAMA - Seventy-two fields inspected in 9 northwestern counties, 70 infested at rate of 248 weevils per acre. Average all fields 83 per acre. (Hays). MISSISSIPPI - Of 1849 fields inspected in 16 delta counties, 750(40 percent) found infested against 32 percent last week and 38 percent last year. The square infestation of 4 percent compares with 6 last week and 5 last year. (Dunnam et al). LOUISIANA - Average square infestation in 421 fields in 18 parishes 6 percent compared with 6 percent last week. No punctured squares in 15 percent of fields examined. First-generation weevils reported throughout State. (Gaines et al). ARKANSAS - Infestation in southwest remains rather light. First-generation adults in some fields of old cotton. Infestation low in southeast and northeast areas. (Barnes). OKLAHOMA - Infestation increased during week, especially in Haskell, McIntosh, Pittsburg and McCurtain Counties. (Stiles). MISSOURI - Some feeding punctures in isolated fields in Ripley County. This is earliest record of boll weevil appearance in State in many years. (Kyd, Thomas). TEXAS - Injurious infestations continue in some fields in south central, upper coastal and eastern areas. Increase expected in these areas following recent rains. (Parencia et al).

BOLLWORMS (Heliothis spp. et al) - NORTH CAROLINA - Very light injury in many areas. (Cotton News Lett.). SOUTH CAROLINA - Some light infestations in Colleton, Allendale, Florence and Barnwell Counties. (Walker, Fife et al). GEORGIA - Light infestations in a few fields. (C.R. Jordan). MISSISSIPPI - Rather large numbers of eggs in some counties. (Bennett). Infestations generally light in delta counties. (Dunnam et al). TENNESSEE - Becoming a problem in some fields in west Tennessee. (Morris). ARKANSAS - Infestations very light compared with last year. (Barnes). TEXAS - Controls being applied in upper coastal area; most general and heavy infestations in Calhoun County. Increase in egg deposition in south central, central and eastern areas with larvae populations sufficiently heavy to warrant controls in occasional fields. Egg deposition continues light in northern areas. (Parencia et al). NEW MEXICO - Appearing in Dona Ana County. Eggs and injury in a few fields. Spotty infestations in Chaves County. (Dobson).

PINK BOLLWORM (Pectinophora gossypiella) - LOUISIANA - Bloom inspection continuing. Results negative so far. TEXAS - Bloom inspection continued in central areas and was extended to north and west Texas. In central area, Caldwell County shows 68.5 pink bollworms per 100,000 blooms compared with 20 last year. Hays and Fayette Counties which were negative in 1952 show 17.4 and 16.1 pink bollwomrs per 100,000 blooms this year. Following counties had no bloom inspection in 1952 but show infestation this year: Coryell - 111.1 pink bollworms per 100,000 blooms; Falls - 31.2; Lee- 20; Limestone - 42.8; McLennan - 1; Milam - 3.4; Robertson - 2.8; Travis - 37.6; and Williamson - 12.3. In east Coastal Bend area, Austin, Jackson, Matagorda, Wharton, Brazoria, Fort Bend, Harris and Liberty Counties continue to show negative results this year. MEXICO - Gin trash inspection to July 1 in Matamoros district shows 148 pink bollworms per bushel of trash examined. This compares with 3,561 in 1952, 139.7 in 1951 and 215 in 1950. (White).

APHIDS - MISSOURI - Light population common over much of extreme southeastern area. (Kyd, Thomas). SOUTH CAROLINA - Light to medium infestations in Orangeburg, Dorchester, Bamberg, Allendale and Barnwell Counties. (Walker, Fife et al).

COTTON LEAFWORM (Alabama argillacea) - TEXAS - Medium widespread infestations in Hall County. (Hooser). Infestations increasing in Calhoun County with some fields showing "ragging". Conditions very favorable for development in upper coastal area. (Parencia et al). LOUISIANA - Light infestation found in Avoyelles Parish, July 3. Larvae up to half grown. (Roussel).

COTTON FLEAHOPPER (Psallus seriatus) - MISSISSIPPI - Blasting small squares in many fields over State. (Bennett). OKLAHOMA - Remains light except in a few fields in Okfuskee and Haskell Counties. (Stiles). TEXAS - Injurious infestations continue in north central, central and northeast areas although some decrease in latter areas. (Parencia et al).

COTTON FLEAHOPPER and TARNISHED PLANT BUG most important pests at present in cotton in LOUISIANA and ARKANSAS. (Gaines et al).

SPIDER MITES - NORTH CAROLINA - Reported in some fields. (Cotton News Lett.). SOUTH CAROLINA - Several heavily infested fields in Florence County. (Walker, Fife et al). Building up in Abbeville and Marion Counties. (Cotton Lett., June 27). TEXAS - Damaging infestations in occasional fields in most areas. (Parencia et al). Infestations generally heavy in lower valley. (Griffith). NEW MEXICO-General in sandy areas of Dona Ana County. (Dobson).

SPIDER MITES and LYGUS BUGS slowly increasing in ARIZONA cotton. Some insecticides being applied. Predator populations high. (Stevenson et al).

GRASSHOPPERS - TEXAS - Severe widespread infestation attacking cotton and fruit trees in Fannin County. (Loftis). Medium widespread on cotton and pastures in Matagorda County. (Pfannstiel, June 27).

THRIPS - NEW MEXICO - Injury continues in late cotton in Dona Ana County. Numerous in some fields in Luna County; light to medium in Eddy County. (Dobson). ARIZONA - Problem continues in Cochise County. (Roney).

LEAF MINERS - TEXAS - Light to medium widespread on cotton in Fort Bend County. (Worthington).

A LEAFHOPPER (*Oncometopia undata*) - MISSOURI - Some injury to cotton in southeast. (Kyd, Thomas).

GARDEN WEBWORM (*Loxostege similalis*) - LOUISIANA - Moths still numerous in cotton fields in Natchitoches area. Damaging infestations likely to develop in Red River Valley. (Summ. Ins. Cond.).

WHITEFLIES - ARIZONA - Causing some concern in Pinal and Maricopa Counties. (Stevenson et al).

FOREST INSECTS

FOREST TENT CATERPILLAR (*Malacosoma disstria*) - WASHINGTON - Epidemic numbers north of Spokane. Areas of willow have been stripped and caterpillars migrating. This is the third year that outbreaks of this insect recorded, with present situation most serious. (Denton, June 27).

FALL WEBWORM (Hyphantria cunea) - MISSISSIPPI - Stripping many forest trees in Aberdeen district. Infestation in Oktibbeha County not increasing much. (Goodgame, Hutchins). MISSOURI - Light in southern area. Damage heaviest on pecans. (Kyd, Thomas).

TWO-SPOTTED SPIDER MITE (Tetranychus bimaculatus) - OKLAHOMA - Causing more trouble in central areas than in previous years. Elms heavily infested. (Bower).

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma) - MICHIGAN - Appearing at Lansing, June 25. (Hutson).

BAGWORM (Thyridopteryx ephemeraeformis) - MISSISSIPPI - Heavy damage to arborvitae in Aberdeen district. (Goodgame).

GREEN-STRIPED MAPLEWORM (Anisota rubicunda) - MISSOURI - Stripping soft maples over much of State. (Kyd, Thomas).

CATERPILLARS ON CEANOTHUS - IDAHO - Two heavy infestations on Ceanothus in northern areas. Probably Nymphalis californica involved. (Stranahan, June 27).

SCURFY SCALE (Chionaspis furfura) - OKLAHOMA - Serious problem. Elms heavily infested. (Bower).

INSECTS AFFECTING MAN AND ANIMALS

HOUSE FLY - SOUTH CAROLINA - More abundant about farm buildings than anytime since 1945. (Nettles). IOWA - Population building up. (Harris).

CHIGGERS (Trombidiidae) - IOWA - Very abundant. (Gunderson)

TELEGRAPHIC REPORT

GRASSHOPPERS - Infestations indicated by surveys as threatening in south central COLORADO have developed full potential and involving over 1 1/2 million acres of private range land. Populations, fifth instars to adults, range from 7 to 75 per square yard throughout area. Mixed range species involved: Melanoplus mexicanus, M. bivittatus, Aulocara elliotti, Drepanopterna femoratum, Phlibostroma quadrimaculatum, and Aeoloplus turnbulli. Control operations capable of treating 300,000 acres of heaviest infestation, before heavy egg depostion occurs, began July 6. Control on a contiguous 300,000 acre infestation in northeastern NEW MEXICO will probably begin July 15. Advanced development of grasshoppers throughout infested disaster panhandle areas of TEXAS and OKLAHOMA and southeastern COLORADO has stopped control this season; however, serious problem may occur in these areas in 1954. (Dutton, July 7).

ADDITIONAL NOTES

NEW YORK - CODLING MOTH larval activity at high level in western area. (Glass). APPLE MAGGOT adult emergence increasing in cages at Poughkeepsie. (Dean). PERIODICAL CICADA infestations in Nassau County much lighter than last appearance. (Campbell). LEAFHOPPERS very abundant on beans; severe damage some fields. Serious threat on untreated fields in central counties. (Leiby). MEXICAN BEAN BEETLE expected more abundant than 1952.

INDIANA - **EUROPEAN** CORN BORER - Practically no infestation in corn planted after May 15. CORN EARWORM causing considerable damage to whorls of corn in southern half of State. Unusual number of reports of severe damage to birch by BRONZE BIRCH BORER. (Davis).

LOUISIANA - Damaging infestations of FALL ARMYWORM in localities throughout State; especially severe on lands flooded earlier. (Summ. Ins. Cond.).

WASHINGTON - PEA APHID infesting seed alfalfa in Prosser-Grandview area at rate of 50-75 per 25 sweeps, June 30. (Johansen). Increasing normally in Walla Walla area. Several thousand acres of peas treated. (Cook). ENGLISH GRAIN APHID on wheat in Walla Walla area has developed into serious outbreak. Thousands of acres of spring wheat infested, with populations ranging up to 100 or more per head. Control hinges on damage that can be expected from the insect on wheat in advanced stage. More information is needed on this point. (Cook). Infestation general in wheat areas of eastern Washington. Some spraying underway. (Telford, Brannon). GRAPE MEALYBUG (Pseudococcus maritimus) fairly common on apricot trees in Yakima Valley. (Newcomer). SEED-CORN MAGGOT causing considerable damage to sweet corn in some fields near Wapato. (Landis). GREEN PEACH APHID migrants dispersing in considerable volume to summer secondary hosts at Yakima. (Davis).

SURVEY METHODS

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians)

For the past several years the Bureau of Entomology in the California Department of Agriculture has been engaged in an intensive campaign directed against the western grape leaf skeletonizer which is restricted in occurrence to the most southern county in the State. This insect, which is a day-flying moth, is found on wild and domestic grape in the southern and eastern portions of San Diego County in a wide range of climatic niches ranging from coastal plains to desert canyons and at elevations from sea level to 4500 feet.

Visual inspection has been found to be the only acceptable method of survey. Extensive bait trap studies have been conducted in search for an attractant which would satisfactorily supplement visual inspection, but nothing of outstanding effectiveness so far tested has been found. The most promising of these tests has involved a preparation made through the addition of the abdominal tips of virgin female moths to benzene. This has shown an attraction to males but has not yet been developed to the point where it can be used on a practical basis.

In the matter of visual survey, the presence of adults is most easily observed. They have a wing expanse of approximately one inch and have an iridescent blue-black metallic color. They usually emerge from over-wintering pupae sometime soon after April 15, and are again abundant in July and to a lesser degree in September based on two, and a light third, generations annually. If present and forced into flight they are inclined to flutter around and return to the vine from which they were originally disturbed. Adults are inclined to favor the lower portion of the vines, both wild and cultivated, and it is on these lower levels that inspection is concentrated. Actually, the adults are very retiring and tend to drop rather than fly when disturbed, making detection somewhat difficult in the absence of heavy populations.

The lemon-yellow eliptical eggs are generally deposited on the under surface of the leaf. They are laid on end, slightly separated, in more or less irregular rows making up patches of from twenty to one hundred eggs. They are not greatly dissimilar from those deposited by the smaller more common lady beetles. Their presence can be easily overlooked unless a leaf by leaf inspection is being made.

The characteristic feeding damage of the gregarious larvae is very conspicuous and easily noted on badly infested canes at a distance of one to two hundred feet.

Larval feeding up to the 4th instar is carried out on the under surface of the leaves producing an extremely thin tissue paper-like area, white and transluscent when fresh, later turning brownish. As the larvae mature, the leaf surface is completely eaten. The earlier larval instars are conspicuous due to their feeding as a colony, side by side, in a steadily advancing line. The mature larvae are also conspicuous due to their brilliant blue and yellow lateral rings which relatively alternate over the length of the body. On severely infested vines nothing remains but the canes, fruit, leaf petioles and the major portion of the midrib.

The mature larvae pupate under the rough bark of infested vines, usually close to the ground level and even in the grass roots several inches away from the base of the vine. The pupae are relatively flat, yellow to dark brown in color depending on age, and encased in a white opaque cocoon. Inspection for pupae even during the dormant period is generally deemed impractical due to the time element involved.

Project experience has been that initial infestation is usually found in the border rows in vineyards. The original hour-glass pattern of inspection was for that reason subsequently changed to a peripheral survey including the first five to ten rows in vineyards in areas suspected of infestation. Although as might be expected there is considerable overlapping during the active season, the various stages closely follow the normal pattern in relation to the generations discussed under adults. (A. G. Forbes, California Dept. of Agri.)